

AMENDMENT

IN THE CLAIMS:

1. (CURRENTLY AMENDED) A power module, comprising:
 - a module housing;
 - a cold plate integrated into the module housing, said cold plate including a direct copper bonded substrate attached to a base plate by a solder layer;
 - a DC bus bar integrated as part of the module housing;
 - a set of DC terminals accessible from an exterior of the module housing;
 - at least three pairs of AC terminals accessible from the exterior of the module housing; and
 - an inverter circuit contained within the module housing, the inverter circuit configurable to selectively switch between at least three output states and electrically coupled between the set of DC terminals and at least one of the pairs of AC terminals.
2. (ORIGINAL) The power module of claim 1, further comprising a set of control terminals accessible from the exterior of the module housing and electrically coupled to the inverter circuit.
3. (ORIGINAL) The power module of claim 1, wherein the inverter circuit comprises at least three pairs of output nodes each electrically coupled to a respective one of the pairs of AC terminals.
- 4-10. (CANCELLED)

11. (CURRENTLY AMENDED) A power system, comprising:
a DC power supply;
a power module, comprising:
a housing including an integrated cold plate, wherein the cold plate includes a direct copper bonded substrate attached to a base plate by a solder layer;
a pair of input terminals accessible from an exterior of the housing, the input terminals electrically coupled to the DC power supply;
a DC bus electrically coupled to the pair of input terminals, wherein the DC bus is integrated into the housing;
three pairs of output terminals accessible from the exterior of the housing;
an AC bus electrically coupled to at least one of the three pairs of output terminals;
and
an inverter circuit configurable to selectively operate in one of at least three output states and electrically coupled between the DC bus and the AC bus; and
a controller to generate control signals to control the inverter circuit.
12. (ORIGINAL) The power system of claim 11 wherein the controller is contained within the housing of the power module.
13. (ORIGINAL) The power system of claim 11, further comprising:
a load, wherein each pair of output terminals is electrically coupled to the AC bus to supply a respective phase of three-phase AC power to the load.
14. (ORIGINAL) The power system of claim 11, further comprising:
a number of loads, wherein each pair of output terminals is electrically coupled to the AC bus to supply AC power to a respective one of the loads.
- 15-19. (CANCELLED)

20. (PREVIOUSLY PRESENTED) The power module as recited in claim 1, wherein the direct copper bonded substrate includes a first copper layer, a ceramic layer and a second copper layer fused together.
21. (PREVIOUSLY PRESENTED) The power module as recited in claim 20, wherein the second copper layer is etched to form electrically isolated structures for selectively mounting circuit components.
22. (PREVIOUSLY PRESENTED) The power module as recited in claim 20 wherein the base plate includes a first side to which the solder layer is attached and a second side in thermal contact with a fluid channel for cooling circuit components mounted to the direct copper bonded substrate.
23. (PREVIOUSLY PRESENTED) The power module as recited in claim 11, wherein the direct copper bonded substrate includes a first copper layer, a ceramic layer and a second copper layer fused together.
24. (PREVIOUSLY PRESENTED) The power module as recited in claim 23, wherein the second copper layer is selectively segmented to define a plurality of electrically isolated structures for selectively mounting inverter circuit components.
25. (PREVIOUSLY PRESENTED) The power module as recited in claim 23, wherein the base plate includes a first side to which the solder layer is attached and a second side in thermal contact with a fluid channel for cooling circuit components mounted to the direct copper bonded substrate.
26. (NEW) The power module as recited in claim 1, wherein the DC bus bar is integrally molded as part of the housing.

27. (NEW) The power module as recited in claim 11, wherein the DC bus bar is integrally molded as part of the housing.